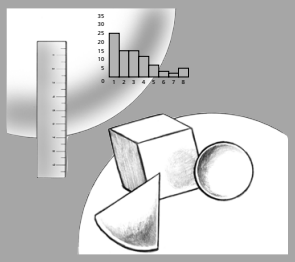
Wisconsin Knowledge and Concepts Examinations
Criterion-Referenced Test

Released Item Book

Mathematics



Grade

8

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Wisconsin Knowledge and Concepts Examinations—Criterion-Referenced Test
(WKCE-CRT)

Released Item Book

What are released items?

The items in this book are actual items from the fall 2005 state assessment, the Wisconsin Knowledge and Concepts Examinations—Criterion-Referenced Test (WKCE-CRT). These items will not be used again on the state assessment and may, therefore, be used in Wisconsin for professional development, improving instruction, and student practice. The items in this book illustrate the formats and kinds of items that students will encounter on the WKCE-CRT.

How do I use this book?

Professional Development

Released items are useful as educators engage in conversations about what students are expected to know and be able to do to demonstrate proficiency on the state assessments relative to the state model academic standards. Released items can inform discussions about state and local standards, curriculum, instruction, and assessment.

Improving Instruction

Teachers may use released items in classroom activities that help students understand how to:

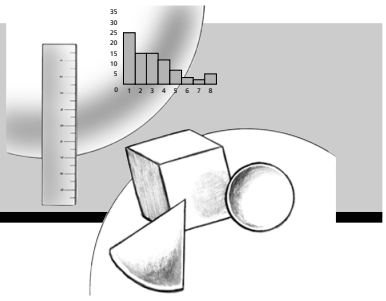
- solve problems
- determine which answer choices are correct, which are incorrect, and why
- respond to constructed response items with complete, thoughtful answers
- approach long and/or multi-step tasks
- use good test-taking strategies.

Student Practice

Students may perform better and with less anxiety if they are familiar with the format of the test and with the types of items they will be required to answer. See the accompanying guide for instructions on administering the released item book as a practice test and for the answer key. Note that a student's score on the practice test cannot be converted to a scale score, used to predict performance on the operational WKCE-CRT, or used to make inferences about the student's learning.

Mathematics

Session 1



1 Look at the equation below.

$$4x - 2 = 18$$

What value of x makes this equation true?

Ⓐ 4

Ⓑ 5

Ⓒ 9

Ⓓ 16

2 Which of these is the best estimate of the value of $4.382 \times 2.641 \times 6.438$?

Ⓐ 48

Ⓑ 72

Ⓒ 90

Ⓓ 105

3 Tawny weighed a culture of bacteria at regular intervals. Her data are recorded in the table below.

Bacteria Culture

Measurement Number	Mass (in micrograms)
1	1.7
2	3.4
3	6.8
4	13.6

If the pattern continues, what will be the mass of the culture the next time Tawny weighs it?

Ⓐ 15.3 micrograms

Ⓑ 17.0 micrograms

Ⓒ 20.4 micrograms

Ⓓ 27.2 micrograms

Go On

4 The expression below represents the number of flowers Ian used in his bouquets.

$$3(12 + 7)$$

Kate used the same number of flowers as Ian. Which expression represents the number of flowers that Kate used?

Ⓐ 15×7

Ⓑ 36×7

Ⓒ $15 + 21$

Ⓓ $36 + 21$

5 Look at the equation below.

$$5x - 3 = 12$$

What value of x makes this equation true?

Ⓐ $\frac{9}{5}$

Ⓑ 3

Ⓒ 5

Ⓓ 6

6 A phone company charges 25 cents for each call plus 5 cents per minute.

Phone Calls

Minutes (t)	Price (c) (in cents)
0	25
1	30
2	35
3	40

Which number sentence shows the relationship between the number of minutes (t) and the price (c), in cents?

Ⓐ $c = 25t + 25$

Ⓑ $c = 8t + 40$

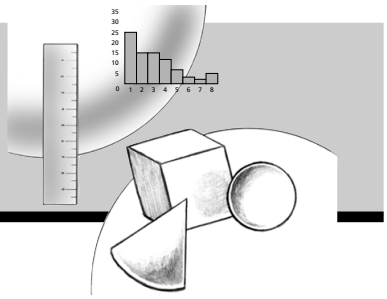
Ⓒ $c = 20 + 5t$

Ⓓ $c = 5t + 25$

STOP

Mathematics

Session 2



7 The distance between Earth and the sun is approximately ninety-one million, four hundred thousand miles. Which of these represents that number?

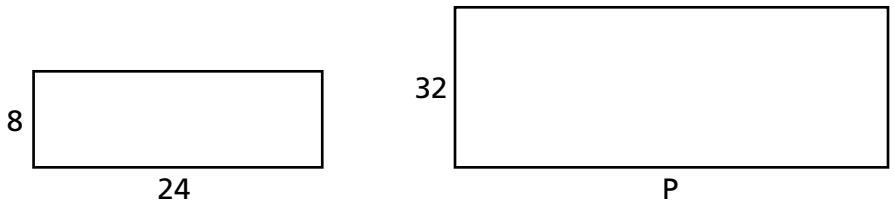
Ⓐ 9,140,000

Ⓑ 9,110,400

Ⓒ 91,000,400

Ⓓ 91,400,000

8 Look at the similar figures below.



Note: The figures are not drawn to scale.

What is the length of side P?

Ⓐ 48

Ⓑ 64

Ⓒ 72

Ⓓ 96

9 Which of these is the best unit for estimating the mass of a pea?

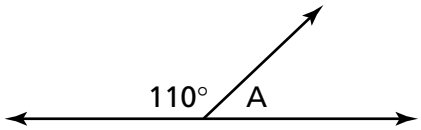
Ⓐ grams

Ⓑ kilograms

Ⓒ centimeters

Ⓓ milliliters

10 Look at the drawing below.



Note: The figure is not drawn to scale.

What is the measure of angle A?

Ⓐ 20°

Ⓑ 45°

Ⓒ 55°

Ⓓ 70°

11 A bag contains 5 green crayons, 6 red crayons, and 1 white crayon. Gary picks 1 crayon without looking. What is the probability that the crayon Gary picks is not a white crayon?

Ⓐ $\frac{1}{12}$

Ⓑ $\frac{1}{11}$

Ⓒ $\frac{5}{6}$

Ⓓ $\frac{11}{12}$

Go On

12 Kate makes a batch of salsa in a large cylindrical pot. The inside of the pot is 9 inches in diameter, and it is filled with 4 inches of salsa. Kate plans to store the salsa in small cylindrical glass jars that are 3 inches in diameter and 4 inches high.

$V = \pi r^2 h$

Step A

How many glass jars will Kate need for all of the salsa? (Use 3.14 to approximate π.)

Answer: _____ glass jars

Step B

Explain how you determined the number of glass jars Kate will need. Use words and/or numbers in your explanation.

_____

_____

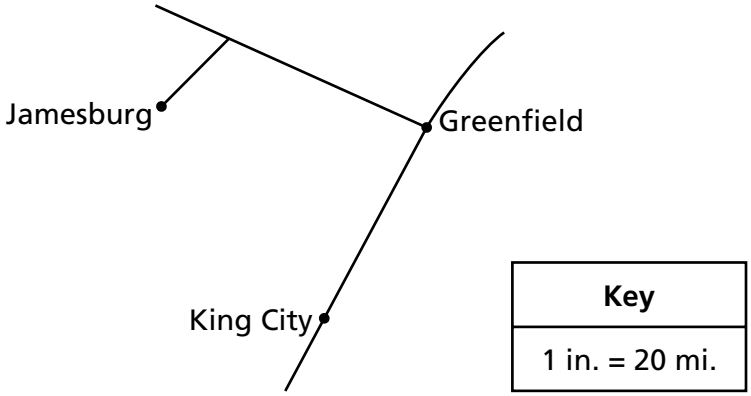
_____

_____

_____

13  Use the inch side of your ruler to help you solve this problem.

Look at the road map below.



Teresa drove from Jamesburg through Greenfield to King City. What was the total distance, in miles, that she drove?

Ⓐ 25 miles

Ⓑ 35 miles

Ⓒ 45 miles

Ⓓ 55 miles

14 The original price for a pair of sneakers was $70. John bought them on sale for 25% off. The sales tax was 6%. How much did John pay for the sneakers, including sales tax?

Ⓐ $16.80

Ⓑ $18.55

Ⓒ $52.50

Ⓓ $55.65

15 Bob plans to flip 3 coins at once. How many different ways can Bob have an outcome of 2 heads and 1 tail?

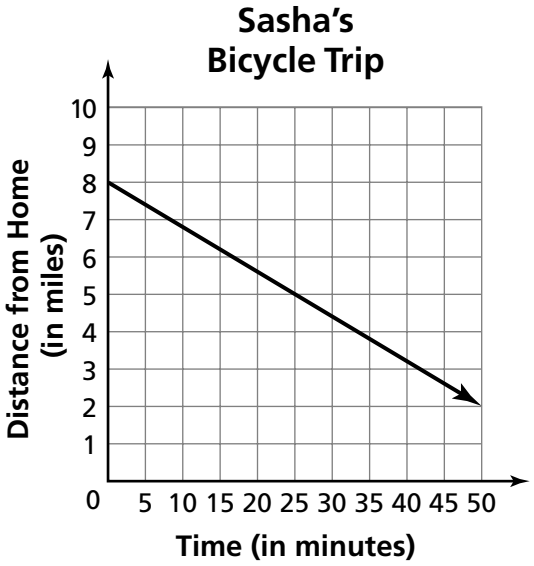
Ⓐ 3

Ⓑ 5

Ⓒ 6

Ⓓ 8

16 The graph below summarizes Sasha's bicycle trip.



Which statement best describes Sasha's bicycle trip?

Ⓐ Sasha stopped riding her bike.

Ⓑ Sasha stayed home and time ran out.

Ⓒ Sasha rode her bicycle towards home.

Ⓓ Sasha started her bicycle trip from home.

17 Scott has an old fish tank in the shape of a box. It fits exactly onto a rectangular stand that is 12 inches wide and 30 inches long. The tank can be filled with water to a depth of 15 inches.

Step A

What is the total volume of water that Scott's old fish tank can hold?

Answer: _____ cubic inches

Step B

Scott is buying a new fish tank that fits on the same stand as the old tank, but holds up to 7,200 cubic inches of water. Use what you know about volume to explain how to find the depth of the water in the new fish tank. Use words and/or numbers in your explanation.

_____

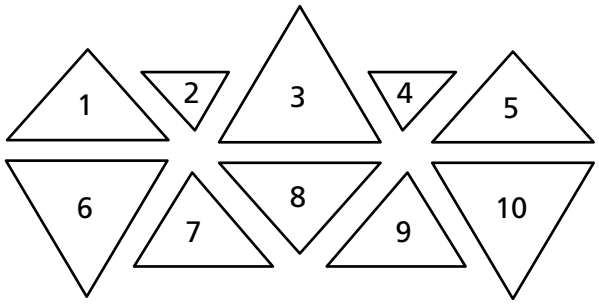
_____

_____

_____

_____

18 Look at the figures below.



Which of these figures appear to be congruent?

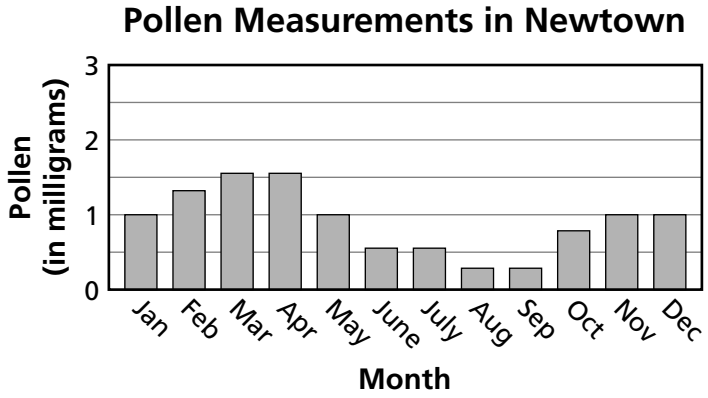
Ⓐ 1 and 6

Ⓑ 3 and 9

Ⓒ 5 and 8

Ⓓ 7 and 2

19 Look at the information in the graph below.



Erin wants to visit Newtown. She becomes ill when there is too much pollen in the air. What months would be best for Erin to visit Newtown?

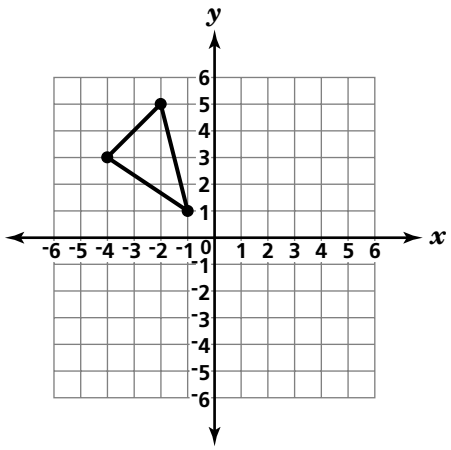
Ⓐ March through June

Ⓑ June through September

Ⓒ September through December

Ⓓ December through March

20 Look at the figure below.



What will be the new coordinates of the figure when it is reflected across the *y*-axis?

Ⓐ (1, 1), (3, 4), (5, 2)

Ⓑ (1, 1), (4, 3), (2, 5)

Ⓒ (−1, −1), (−3, −4), (−5, −2)

Ⓓ (−1, −1), (−4, −3), (−2, −5)

STOP

Mathematics Grade 8 Released Item Book

Wisconsin Department of Public Instruction
Elizabeth Burmaster, State Superintendent